# CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory
An ISO 9001:2008 Certified Company
**NABL** - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ
BSCIC
ISO 9001 REGISTERED


Job No.: CTCE/BBMP/AP/W.No.12/WBM/AIV/2016-17 07.12.2016

## Aggregate Impact Value

IS: 2386 Part IV

| | |
|---|---|
| Customer | **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore. |
| Agency | **Mr. A. Puttaraju,** #B, 48/5, Pipe line, B Cross, Bahubali Nagara, Jalahalli Village, Bangalore – 13. |
| Name of the Work | Improvements to roads and drains at Nisarga Layout in Abbigere in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore. |
| Reference | AEE/SSD/PR/42/2016-17 Dated: 03.11.2016 |
| Source / Location | WBM Mix Plant, Bangalore |
| Type of Mix | Water Bound Macadam |
| Date of Testing | 07.12.2016 |

| Sl No. | Details | Trial No. 1 | Trial No. 2 | Average |
|---|---|---|---|---|
| 1 | Total weight of aggregate sample filling the cylindrical measure = $W_1$ g | 387 | 383 | |
| 2 | Weight of agregate passing 2.36 mm sieve after the test = $W_2$ g | 85 | 89 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 302 | 294 | |
| 4 | Aggregate Impact value = percent fines | 21.96 | 23.24 | |
| | $100^* (W_2/W_1)\%$ | | | 22.60 |

Comments:

→ Maximum allowable Aggregate Impact value for Water Bound Macadam is 30%

Note:

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*Civil-tech Consultants & Engineers*
*#23/14, 7th Cross 3rd Stage 4th Block,*
*Shakthi Ganapathinagar,*
*Basaveshwaranagar, Bangalore-560 079.*

AG-12
ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ಬಾಗಲಗುಂಟೆ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಎಸ್.ಎಂ. ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು.

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Job No: CTCE/BBMP/AP/W.No.12/WBM-II/S-T/2016-17 07.12.2016

## DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

| | |
|---|---|
| Customer | **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore. |
| Agency | **Mr. A. Puttaraju,** #B, 48/5, Pipe line, B Cross, Bahubali Nagara, Jalahalli Village, Bangalore – 13. |
| Name of Work | Improvements to roads and drains at Nisarga Layout in Abbigere in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore. |
| Reference | AEE/SSD/PR/42/2016-17 Dated: 03.11.2016 |
| Technical Reference | IS 2386(Part 1) 1963 (RA 2011) |
| Type of Mix | Water Bound Macadam (Grade-II Metal) |
| Date of Testing | 07.12.2016 |

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Result : Flakiness Index = **12.52%**

Elongation Index = **13.69%**

**Result : Combined Flakiness & Elongation index 26.21%**

**Comments:**

Maximum allowable Falakiness & Elongation Index for Water Bound Macadam is 30%

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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಮಾನ್ಯ. ರಸ್ತೆ. ರವೀಂದ್ರನಾಥ, ಬೆಂಗಳೂರು

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Basaveshwaranagar, Bangalore-560 079.

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Job No.: CTCE/BBMP/AP/W.No.12/WBM-III/2016-17 Date: 13.12.2016

## REPORT

| | | |
|---|---|---|
| Customer | : | **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore. |
| Agency | : | **Mr. A. Puttaraju,** #B, 48/5, Pipe line, B Cross, Bahubali Nagara, Jalahalli Village, Bangalore – 13. |
| Name of the Work | : | Improvements to roads and drains at Nisarga Layout in Abbigere in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore. |
| Reference | : | AEE/SSD/PR/42/2016-17 Dated: 03.11.2016 |
| Type of Mix | : | Water Bound Macadam (Grade-III Metal) |
| Date of Sampling | : | 10.12.2016 |
| Date of Testing | : | 13.12.2016 |

1) SEIVE ANALYSIS:

| IS Sieve designation Size,mm | Percentage Passing for Graded Aggregate of Nominal size | Percentage by Weight Passing as per MORTH table 400-7 |
|---|---|---|
| 63mm | 100.00 | 100.00 |
| 53mm | 96.55 | 95-100 |
| 45mm | 70.20 | 65-90 |
| 22.4mm | 6.85 | 0-10 |
| 11.2mm | 2.40 | 0-5 |

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13.12.2016

## Aggregate Impact Value

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| Agency | **Mr. A. Puttaraju,** #B, 48/5, Pipe line, B Cross, Bahubali Nagara, Jalahalli Village, Bangalore – 13. |
| Name of the Work | Improvements to roads and drains at Nisarga Layout in Abbigere in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore. |
| Reference | AEE/SSD/PR/42/2016-17 Dated: 03.11.2016 |
| Source / Location | WBM Mix Plant, Bangalore |
| Type of Mix | Water Bound Macadam |
| Date of Testing | 13.12.2016 |

| Sl No. | Details | Trial No. 1 | Trial No. 2 | Average |
|---|---|---|---|---|
| 1 | Total weight of aggregate sample filling the cylindrical measure = $W_1$ g | 386 | 383 | |
| 2 | Weight of agregate passing 2.36 mm sieve after the test = $W_2$ g | 86 | 82 | |
| 3 | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g | 300 | 301 | |
| 4 | Aggregate Impact value = percent fines | 22.28 | 21.41 | |
| | $100^* (W_2/W_1)\%$ | | | 21.84 |

Comments:

→ Maximum allowable Aggregate Impact value for Water Bound Macadam is 30%

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ಪಾ.ಎಂ. ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

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Ref No: CTCE/BBMP/AP/W.No.12/WBM-III/S-T/2016-17 13.12.2016

## DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

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|---|---|
| Customer | **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore. |
| Agency | **Mr. A. Puttaraju,** #B, 48/5, Pipe line, B Cross, Bahubali Nagara, Jalahalli Village, Bangalore – 13. |
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| Reference | AEE/SSD/PR/42/2016-17 Dated: 03.11.2016 |
| Technical Reference | IS 2386(Part 1) 1963 (RA 2007) |
| Type of Mix | Water Bound Macadam (Grade-III Metal) |
| Date of Testing | 13.12.2016 |

Result : Flakiness Index = **11.85%**

Elongation Index = **13.52%**

**Result : Combined Flakiness & Elongation index** **25.37%**

**Comments:**

Maximum allowable Falakiness & Elongation Index for Water Bound Macadam is 30%

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ಪ್ರಮಾಣ ಬೇಗುವುದು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಯಾ.ಎಂ. ರಸ್ತೆ, ಬೆಂಗಳೂರು.

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